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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/528,282	03/17/2000	Yonezo Furuya	109A 2948	4121

7590 10/12/2004

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EXAMINER	
SHAPIRO, JEFFERY A	
ART UNIT	**PAPER NUMBER**
3653	

DATE MAILED: 10/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/528,282	FURUYA, YONEZO	
	Examiner	Art Unit	
	Jeffrey A. Shapiro	3653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. In view of the Appeal Brief filed on 7/19/04, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 7-9, 11-14, 16-17,19-23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Strauts (US 5,630,494). Strauts discloses the coin inspection apparatus as follows.

As described in Claims 1,11, and 16;

a. an exciting coil ((212), see figure 9 and col. 12, lines 34-65) arranged in the vicinity of one side of a coin passage;

b. a receiving coil ((222, 224), see figure 9 and col. 12, lines 34-65) arranged in the vicinity of said one side of said coin passage so as to be electromagnetically coupled with said exciting coil;

c. oscillation means (see col. 14, lines 26-34) for exciting and oscillating said exciting coil at a predetermined frequency to produce an electromagnetic field;

d. first detecting means (250) for detecting at least one of amplitude, frequency and phase of an oscillation voltage of said exciting coil (see col. 14, lines 48-53);

e. second detecting means (256) for detecting an electromotive force signal generated in said receiving coil;

f. discriminating means (see col. 15, lines 31-44, noting the microprocessor appears to be such a means) for discriminating authenticity of the thrown coin based on detection from said first and second detecting means;

g. *discriminating authenticity based on a combination of an electromotive force signal detected by said receiving coil and amplitude, frequency or phase of an oscillation voltage of said exciting coil (see col. 14, lines 48-53 and col. 15, lines 3-30, example)*;

As described in Claims 2, 7, 12 and 19;

h. said predetermined frequency is set in accordance with material of the coin to be discriminated (see col. 15, lines 3-30);

As described in Claims 3, 8, 13 and 20;

i. said discriminating means determines material of the thrown coins based on the amplitude of the oscillation voltage of said exciting coil (see col. 15, lines 31-44);

As described in Claims 4, 9, 14 and 25;

j. said discriminating means samples said electromotive force signal in *a time* period, and performs a statistical process based on the sampled values to determine a feature of the thrown coin (see figure 12b, for example as well as col. 15, lines 4-16, noting that a "cycle" is construed as a time period);

As described in Claims 5, 6, 13 and 16;

k. two receiving coils having substantially identical characteristics and arranged in the vicinity of said one side of said coin passage so that said receiving coils are electromagnetically coupled with said exciting coil (see figures 9-11);

l. discriminating authenticity of the coin based upon at least one of amplitude, frequency and phase of oscillation voltage of said exciting coil, and an electromotive force signal *influenced by a reactive magnetic field caused by eddy currents induced on a surface of the coin when the coin*

passes through said electromagnetic field and detected by said two receiving coils (see col. 14, lines 48-53 and col. 15, lines 31-44);

As described in Claim 17;

m. said first detecting means includes a first detector circuit (250) for outputting a direct voltage signal corresponding to the oscillation voltage of said exciting coil;

As described in Claims 21-23;

n. said exciting coil is arranged at a predetermined distance from said receiving coils so that a line connecting the center of magnetic poles of said exciting coil is substantially **parallel or perpendicular** with an extending direction of said coin passage, and two receiving coils are arranged above a coin rail provided with said coin passage so that a line connecting centers of said two receiving coils is substantially **parallel or perpendicular** with an extending direction of said coin passage (see figures 9-11);

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 6, 18, 24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strauts in view of Fougere (US 3,870,137).

Strauts discloses the system described above. Strauts does not expressly disclose, but Fougere discloses;

As described in Claims 18 and 27;

o. said second detecting means comprises a bridge circuit ((520), see col. 7, lines 48-67 and col. 8, lines 1-24, (720), see col. 11, lines 48-67 and col. 1-48, and (1320), see col. 21, lines 1-30) including said two receiving coils, a different amplifier circuit for amplifying an alternating voltage signal outputted from said bridge circuit and outputting the amplified signal, and a second detector circuit for detecting and rectifying the alternating voltage signal from said differential amplifier circuit and converting the same into a direct voltage signal corresponding to the output of said bridge circuit (see figures 7, 11-13);

As described in Claims 6 and 24;

p. said coin passage (30) is formed so that a coin passing therethrough is inclined to said one side of said coin passage where said exciting coil and said receiving coils are arranged (see col. 4, lines 8-21);

Both Strauts and Fougere are analogous art because they both concern gathering sampled data sensed by a particular validation sensor and analysis of said data for judgment of the genuiness of said data.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the bridge circuits of Fougere in the validators of Strauts.

The suggestion/motivation would have been to balance the inputs and outputs of the amplifiers coming from the eddy current sensors so as to indicate a digital signal at one level when balanced or close to balanced and at another level at other times. See Fougere, col. 8, lines 11-49 and col. 9, lines 1-23.

It would also have been obvious to use a coin track that is slanted in the system of Strauts, as taught by Fougere.

The suggestion/motivation would have been to "cause the face of the coin to bear against the wall" of the coin passage. See Fougere, col. 4, lines 8-21.

Therefore, it would have been obvious to combine Strauts and Fougere in order to obtain the invention as described in Claims 6, 18, 24 and 27.

6. Claims 10, 15, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strauts in view of Laskowski et al (US 6,101,266).

Strauts discloses the system as described above. Strauts further discloses sampling data from said eddy current sensors at particular cycles/time intervals. See Strauts, col. 15, lines 4-44.

Strauts does not expressly disclose, but Laskowski discloses:

As described in Claims 10, 15 and 26;

q. said statistical process is performed by obtaining a coefficient of correlation of said sampled values with respect to a reference coin, and discriminating the thrown coin based on magnitude of said correlation coefficient; See Laskowski, col. 8, lines 47-67 and col. 9, lines 1-23.

Both Strauts and Laskowski are analogous art because they both concern gathering sampled data sensed by a particular validation sensor and analysis of said data for judgment of the genuiness of said data.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the statistical methods of using correlation coefficients to analyze the data generated by the eddy current sensors of Strauts, as taught by Laskowski.

The suggestion/motivation would have been to compare and match a set of sampled data with a set of stored data from actual known coins of a particular denomination such that a higher correlation coefficient between the set of sampled data and a particular set of stored data will indicate the stored set that corresponds closest to the sampled set, thereby indicating the particular coin denomination and genuiness of the coin. See Laskowski, col. 8, lines 47-67 and col. 9, lines 1-23.

Therefore, it would have been obvious to combine Strauts and Laskowski in order to obtain the invention as described in Claims 10, 15 and 26.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Iwamoto et al '225 is cited as another example of a coin sensor with detector and excitation coil on the same side of the coin track.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey A. Shapiro whose telephone number is (703)308-3423. The examiner can normally be reached on Monday-Friday, 9:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald P. Walsh can be reached on (703)306-4173. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffrey A. Shapiro
Examiner
Art Unit 3653

October 3, 2004

DONALD P. WALSH
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